

CLAIMS

1. Process for manufacturing a laminate, which at least comprises the application of a layer of polyamide to a substrate, characterized in that as polyamide  
 5 mainly branched polyamide is used that is at least composed of units derived from:
- a. AB monomers, which are understood to mean a monomer that has both a carboxylic acid group (A) and an amine group (B),
  - b. at least one compound I, being a carboxylic acid ( $A_v$ ) with functionality  $v \geq$   
 10 2 or an amine ( $B_w$ ) with functionality  $w \geq 2$ ,
  - c. at least one compound II, being a carboxylic acid ( $A_v$ ) with functionality  $v \geq$   
 3 or an amine ( $B_w$ ) with functionality  $w \geq 3$ , with compound II being a carboxylic acid if compound I is an amine or with compound II being an amine if compound I is a carboxylic acid, wherein the quantities of units,  
 15 derived from all the carboxylic acids and amines in the polyamide, satisfy formula 1

$$P < 1 / [(F_A - 1) \cdot (F_B - 1)] \quad (1)$$

20 in which:

$$P = [\Sigma(n_i \cdot f_i)]_X / [\Sigma(n_i \cdot f_i)]_Y \quad (2)$$

in which  $P \leq 1$  and either  $X = A$  and  $Y = B$ , or  $X = B$  and  $Y = A$  and

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$$F = \Sigma (n_i \cdot f_i^2) / \Sigma (n_i \cdot f_i) \quad (3)$$

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for respectively all carboxylic acids ( $F_A$ ) and amines ( $F_B$ ), wherein  $f_i$  is the functionality of a carboxylic acid ( $v_i$ ) or amine ( $w_i$ ),  $n_i$  is the number of moles of a carboxylic acid or amine and the summation is carried out over all units derived from carboxylic acids and amines in the polyamide.

2. Process according to claim 1, in which the layer of polyamide is applied by extrusion coating.
3. Process according to claim 1 or 2, in which the substrate, is a metal or is

paper or paperboard, optionally coated with a layer of a metal foil.

4. Laminate comprising a substrate and a layer consisting mainly of a branched polyamide that is at least composed of units derived from:

- a. AB monomers, which are understood to mean a monomer that has both a carboxylic acid group (A) and an amine group (B),
- b. at least one compound I, being a carboxylic acid ( $A_v$ ) with functionality  $v \geq 2$  or an amine ( $B_w$ ) with functionality  $w \geq 2$ ,
- c. at least one compound II, being a carboxylic acid ( $A_v$ ) with functionality  $v \geq 3$  or an amine ( $B_w$ ) with functionality  $w \geq 3$ , with compound II being a carboxylic acid if compound I is an amine or with compound II being an amine if compound I is a carboxylic acid, wherein the quantities of units, derived from all the carboxylic acids and amines in the polyamide, satisfy formula 1

$$P < 1 / [(F_A - 1) \cdot (F_B - 1)] \quad (1)$$

in which:

$$P = [\sum (n_i \cdot f_i)]_X / [\sum (n_i \cdot f_i)]_Y \quad (2)$$

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in which  $P \leq 1$  and either  $X = A$  and  $Y = B$ , or  $X = B$  and  $Y = A$  and

$$F = \sum (n_i \cdot f_i^2) / \sum (n_i \cdot f_i) \quad (3)$$

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for respectively all carboxylic acids ( $F_A$ ) and amines ( $F_B$ ), wherein  $f_i$  is the functionality of a carboxylic acid ( $v_i$ ) or amine ( $w_i$ ),  $n_i$  is the number of moles of a carboxylic acid or amine and the summation is carried out over all units derived from carboxylic acids and amines in the polyamide.

5. Use of the laminate according to claim 4 for manufacturing a packaging for foodstuffs.
6. Packaging for foodstuffs, comprising the laminate according to claim 4.

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